

# **TOOL SUPPORT KIT**

## **FIELD OF THE INVENTION**

The present invention relates to a tool support and more particularly to a kit of parts for assembly into a tool support using a beam for supporting a tool thereon.

## **BACKGROUND**

Various tools including power saws and the like are intended to be supported on a table surface in use. These tools are convenient when working in a fixed location, but when travelling from one remote job site to another, transporting a suitable supporting surface along with the tools can be awkward and cumbersome. Various types of portable workbenches are known, but in general, the known workbenches occupy considerable space both when transporting and by retailers on store shelves.

## **SUMMARY**

According to one aspect of the present invention there is provided a kit of parts for assembly into a tool support using an elongate beam, the kit comprising:

a pair of uprights including respective clamping members supported thereon for clamping onto spaced apart positions on the beam; and

a supporting member including a mounting portion for mounting on the beam and a supporting surface for supporting a tool thereon.

The use of a kit of parts for assembly of a tool support or workbench using a beam provided by the user enables minimal components to be transported from site to site by the user. Furthermore, retailers are only required to stock minimal parts on store shelves at reduced cost as the user can supply their own beam.

The clamping members are each preferably movable between a

clamping position securing the beam therein and a released position in which the beam is free to be released therefrom. In the preferred embodiment, each clamping member comprises a pair of confronting hooks which are biased towards one another into the clamping position.

5                Each clamping member is arranged to receive a conventional size wooden construction beam therethrough, for example wooden construction beams which are commonly available in multiple lengths with cross section sizes designated as 2 inches by 6 inches or 2 inches by 8 inches.

10              Each clamping member is preferably arranged to clamp a side of the beam to permit securement of the clamping member at various longitudinal positions along the beam.

                There may be provided a material support member supported on at least one of the uprights above a respective one of the clamping members for supporting a workpiece thereon. In one example, the tool comprises a power saw,  
15              while the material support member comprises a supporting surface for supporting an end of an elongate wooden member to be sawed.

                The material support member is preferably adjustable in height to be positioned level with a variety of different makes and types of tools supported on the beam.

20              There may be provided a pair of supporting members for supporting the tool thereon at spaced longitudinal positions along the beam.

                The mounting portion of the supporting member preferably comprises a channel for receiving the beam therethrough. When the channel is inserted over a top and both sides of the beam, no fasteners for securement of the supporting  
25              member to the beam is required as the supporting member is self supporting. The channel in this instance in particular, is preferably suitably sized to receive a

conventional size wooden construction beam therethrough.

The supporting surface of the supporting member may comprise a flat plate including mounting apertures therein for receiving respective fasteners therethrough.

5                   When each upright comprises a base and an upright post extending upwardly from the base, each clamping member is preferably adjustably supported on the respective upright for supporting the clamping member at various heights in relation to the respective base of the upright.

#### BRIEF DESCRIPTION OF THE DRAWINGS

10                   In the accompanying drawings, which illustrate exemplary embodiments of the present invention:

Figure 1 is a perspective view of the kit of parts shown assembled supporting a tool thereon.

15                   Figure 2 is an exploded perspective view of one of the uprights of the kit.

Figure 3 is a side elevational view of one of the uprights of the kit.

Figure 4 and Figure 5 are respective side elevational and top plan views of one of the supporting members of the kit of parts for supporting the tool thereon.

20                   Figure 6 is a top plan view of plural kits of parts shown in an assembled position for supporting various materials thereon.

Figure 7 is a perspective view of an alternative configuration of the top hook of one of the clamping members.

#### DETAILED DESCRIPTION

25                   Referring to the accompanying drawings, there is illustrated a kit of parts generally indicated by reference numeral 10 which is intended for assembly

into a tool support as illustrated in Figure 1 in an assembled position. The tool support is arranged to support a tool 12 thereon, for example a power mitre saw as illustrated in the drawings. The kit of parts 10 requires a user provided beam 14 of the type which is commercially available in the form of conventional wooden construction beams of various length and having standard cross sections designated as two inches by eight inches for example.

The kit of parts generally includes two uprights 20 and two tool supporting members 22. Additional tool supporting members 22 may be provided if it is desirable to support multiple tools on a common beam, while multiple uprights 20 may additionally be provided or plural kits may be combined to form a more elaborate work area including a working table as illustrated in Figure 6.

Each upright generally includes a base 24 in the form of a rigid angle iron having a pair of feet at opposed ends thereof for being supported on the ground. A base collar 26 is centrally located on the angle iron of the base 24 perpendicularly thereto to extend vertically upwardly when the angle iron is supported horizontally on the ground. An additional brace member 28 spans between the angle iron and the base collar 26 at a position spaced upwardly from the ground.

The base collar is square in cross section for slidably receiving the base section 30 of a telescoping post 32 therein. The base section 30 is slidably received within the base collar 26 and secured therein by a suitable threaded clamp 34 for adjustment of the height of the base section in the longitudinal direction of the post. The post 32 further includes a main section 36 which is also square in cross-section for being slidably received overtop of the base section 30 of the post at a top end opposite the base collar 26. A threaded clamp 34 is similarly received in the main section 36 of the post for securing the base section 30 therein at various longitudinal positions for height adjustment of the post relative to the base 24.

A clamping member 38 is supported on each upright on the main section 36 of the post so as to be adjustable in height relative to the base 24 of the upright. Each clamping member 38 comprises a pair of confronting hooks which includes a bottom hook 40 and a top hook 42.

5           The bottom hook 40 comprises a shelf 44 which is substantially wider than the post 32 which projects outwardly from one side of the post and extends perpendicularly to the longitudinal direction of the post. A free outer edge of the shelf 44 is turned upwardly to define a generally U-shaped channel with the post which is suitably sized to receive a bottom edge of a conventional sized beam 14  
10   therein. A gusset 46 spans between the bottom side of the shelf 44 and the post 32 upon which it is supported.

          The top hook 42 is movably supported on the post 32 for movement between a clamped position confronting the bottom hook and securing the beam 14 there between and a released position in which the top hook is spaced upwardly in  
15   relation to the clamped position so as to permit the beam to be freely released from the clamping member. The top hook 42 is supported on a lever 48 which is pivotally supported on the post 32 adjacent the top end thereof. The lever is pivotally supported on the post on an opposite side as the corresponding bottom hook 40 and projects overtop the post to extend outwardly from the post on the same side as the  
20   bottom hook. The top hook 42 is thus positioned on the bottom side of the lever 48 in vertical alignment with the corresponding bottom hook.

          The lever 48 generally includes a pair of side pivot flanges 50 which are parallel and spaced apart on opposite sides of the post 32 and a top flange 52 which spans between the opposed side pivot flanges 50. Only one of the side pivot  
25   flanges projects from the post on the same side as the bottom hook 40 and includes the top hook 42 formed therein in the form of a generally U-shaped notch which is

suitably sized to fit overtop of the top edge of the beam 14.

An outer side of the top hook 42 spanning away from the post defines a camming face 54 which tapers outwardly from the post at an incline away from the bottom hook from the mouth of the top hook 42 to the free end of the lever 48 spaced outwardly from the post. In use, a board is first inserted into the bottom hook 40 and then twisted into position so that the camming face 54 of the lever rides along the top edge of the beam as the beam is twisted into a vertical position to automatically deflect the lever upwardly sufficiently that the beam may be received within the top hook 42.

10               The top flange 52 of the lever overlaps the open top end of the post 32 with the pivot axis of the lever and the top hook of the lever being located on opposite sides of the post. A spring 56 is anchored to the top flange 52 of the lever by a suitable fastener to extend between the lever and an anchor pin 58 located within the post 32 spaced below the open top end of the post. The spring, which is  
15               housed within the hollow post 32, thus pulls downwardly on the lever to pull the lever towards the post and accordingly pull the top hook 42 downwardly to urge it towards the opposing and confronting bottom hook 40.

Each upright 20 further includes a material support 60 which includes a mounting collar 62 mounted on the post 32 parallel thereto and directly adjacent a  
20               top end thereof. The lever 48 is pivotally anchored on an outer side of the mounting collar 62 so that the side pivot flanges 50 span across opposing sides of both the mounting collar 62 and the post. The top flange 52 of the lever is open between the opposing side pivot flanges 50 above the mounting collar 62 so that a mounting post 64 can be received within the mounting collar 62 through the opening in the lever 48  
25               between the side pivot flanges 50 thereof. Both the mounting collar 62 and the mounting post 64 have a mating square cross section so that the mounting post 64

is adjustable in height by selectively securing the post within the collar at various positions by a threaded clamp 34 as described previously.

The material support 60 further includes a support flange 66 which is perpendicularly supported on a top end of the mounting post 64. A side flange 68  
5 acts as a gusset between the support flange 66 and the mounting post 64 along one side of the support flange. The support flange 66 further includes an end flange 70 which lies perpendicularly to the support flange at one end thereof spaced laterally outwardly from the post to assist in guiding material supported on the support flange. The support flange is adjustable in height with the mounting post 64 relative to the  
10 clamping member 38 and the base 24 of the upright so that an upper surface of the support flange 66 may be aligned vertically in height with the upper surface of a working deck of the tool 12 supported by the tool supporting members 22.

The tool 12 is supported on the beam by the tool supporting members which are selectively clamped onto the beam 14. Each tool supporting member  
15 includes a supporting surface 72 in the form of an elongate flat plate which lies perpendicular to the longitudinal direction of the beam once supported thereon. The supporting surface includes a bolt hole 74 at one end thereof and an elongate slot 76 at an opposing end in which the slot 76 is oriented to extend towards and away the bolt hole 74 so that a spacing between a pair of fasteners for bolting the tool  
20 thereon is adjustable.

A channel is formed on a bottom side of the supporting surface for receiving the beam therein by a pair of side flanges 78 which lie parallel and spaced apart from one another perpendicularly to the supporting surface 72. Suitable gussets 80 are provided which span between the side flanges and the supporting  
25 surface. The spacing of the side flanges 78 is arranged to receive a side edge of a conventional size wooden construction beam therein, so that the tool supporting

members are slidably received overtop of the beam and held in place without fasteners being required.

In use, the kit of parts 10 is first purchased by a user and a beam 14 is provided either separately or with the kit to permit assembly into the tool support as illustrated in Figure 1. The beam is preferably a standard size wooden construction beam which is supported on the uprights by first inserting a bottom edge into the respective bottom hooks at spaced positions along the beam. The beam is then twisted upwardly into a vertical position so that the camming face 54 of each top hook permits the top hook to be biased away from the bottom hook sufficiently to receive the top edge of the beam within the top hooks 42. The tool supporting members may then be inserted overtop of the top edge of the beam so that the tool 12 may be bolted to the bolt hole 74 and slot 76 of the tool supporting members at a base of the tool. Spacing of the tool supporting members from one another and the use of an elongate mounting slot 76 permit various adjustments of mounting locations to accommodate various types of tools to be mounted thereon. Once the tool is mounted in place, the height of the posts 32 may be adjusted to a desired working height of the tool and subsequently the material supports 60 may be adjusted so as to lie at approximately the same height as the deck of the tool supported by the kit of parts 10.

In a further arrangement as illustrated in Figure 6, multiple kits may be combined together at spaced positions along separate beams 14 with the beams lying parallel to one another so that a table surface may be created in addition to a tool supporting area by spanning a suitable sheet 90 of rigid material, for example a desired thickness of plywood, between the material supports of uprights supported on opposed and spaced apart beams 14.

In a further embodiment of the clamping members, as illustrated in



Figure 6, biasing of the confronting hooks of the clamping members towards one another may be accomplished by a spring 80 under compression. The lever 48 in this instance includes a crank arm 82 which is fixed in orientation relative to the lever 48 to extend at a downward incline. The crank arm terminates at a free end 84  
5 spaced laterally from the post 32 for mounting the compression spring 80 between the free end 84 of the crank arm 82 and the post to urge the crank arm outwardly and accordingly urge the upper hook 42 on the lever 48 downward. Any other variation of biasing which acts to urge the hooks of each clamping members towards one another may be suitable.

10                   While various embodiments of the present invention have been described in the foregoing, it is to be understood that other embodiments are possible within the scope of the invention. The invention is to be considered limited solely by the scope of the appended claims.